

MONTHLY WEATHER REVIEW.

Editor: Prof. CLEVELAND ABBE.

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INTRODUCTION.

The MONTHLY WEATHER REVIEW for April, 1900, is based on reports from about 3,103 stations furnished by employees and voluntary observers, classified as follows: regular stations of the Weather Bureau, 158; West Indian service stations, 12; special river stations, 132; special rainfall stations, 48; voluntary observers of the Weather Bureau, 2,562; Army post hospital reports, 27; United States Life-Saving Service, 9; Southern Pacific Railway Company, 96; Canadian Meteorological Service, 32; Mexican Telegraph Service, 20; Mexican voluntary stations, 7; Mexican Telegraph Company, 3. International simultaneous observations are received from a few stations and used, together with trustworthy newspaper extracts and special reports.

Special acknowledgment is made of the hearty cooperation of Prof. R. F. Stupart, Director of the Meteorological Service of the Dominion of Canada; Mr. Curtis J. Lyons, Meteorologist to the Hawaiian Government Survey, Honolulu; Señor Manuel E. Pastrana, Director of the Central Meteorological and Magnetic Observatory of Mexico; Señor A. M. Chaves, Director-General of Mexican Telegraphs; Mr. Maxwell Hall, Govern-

ment Meteorologist, Kingston, Jamaica; Capt. S. I. Kimball, Superintendent of the United States Life-Saving Service; and Commander Chapman C. Todd, Hydrographer, United States Navy.

The REVIEW is prepared under the general editorial supervision of Prof. Cleveland Abbe.

Attention is called to the fact that the clocks and self-registers at regular Weather Bureau stations are all set to seventy-fifth meridian or eastern standard time, which is exactly five hours behind Greenwich time; as far as practicable, only this standard of time is used in the text of the REVIEW, since all Weather Bureau observations are required to be taken and recorded by it. The standards used by the public in the United States and Canada and by the voluntary observers are believed to conform generally to the modern international system of standard meridians, one hour apart, beginning with Greenwich. Records of miscellaneous phenomena that are reported occasionally in other standards of time by voluntary observers or newspaper correspondents are sometimes corrected to agree with the eastern standard; otherwise, the local meridian is mentioned.

FORECASTS AND WARNINGS.

By Prof. E. B. GARRIOTT, in charge of Forecast Division.

During the month of April, 1900, unusually high atmospheric pressure over the Lake region and Ohio Valley and low pressure in the Southwest, were attended by heavy rains in the Southern and southwestern States, and by cool and dry weather in the north-central and northeastern States. In the Gulf States and lower Mississippi Valley considerable damage was caused by floods in the smaller streams.

In Texas heavy rain began during the night of the 5th and continued until the 7th. On the afternoon of the 7th the great-granite dam across the Colorado River, two miles above Austin, gave way causing the loss of several lives and destroying a great amount of property. The second period of heavy rain began in the middle and east Gulf States on the 10th, and continued during the 11th, after which an interval of fair weather prevailed until the 15th, when rain set in along the middle and west Gulf coast. From the 16th to the 18th remarkably heavy rains fell in the middle Gulf States and the lower Mississippi Valley, causing washouts on railroads, and an immense amount of damage to property and crops. At Meridian, Miss., the dam of the waterworks gave way on the 16th, and at Bessemer, Ala., the reservoir of the waterworks broke. Rains continued at intervals during the remainder of the month in the Southern States, and on the 27th exceptionally heavy downpours caused damage at points along the Brazos and Colorado rivers, Texas. At Waco, Tex., a number of persons were drowned, and the property loss was placed at \$150,000. In the various rivers and streams of

Texas the loss by flood was estimated at \$3,000,000 to \$5,000,000.

In districts where the river and flood service of the Weather Bureau has been organized warnings were issued of the floods of the month. The extension of this service over Texas was begun last year and will be improved as rapidly as available funds will permit. Notwithstanding the lack of data and information regarding the rivers of that section the floods of Texas were, in some degree, anticipated by warnings. On the 7th interests along the Colorado River south of Austin were advised of a probable sudden and decided rise in that river. On the 27th all points along the Brazos and Colorado rivers were warned of a rise, and freshets for the smaller streams of Texas were forecast. In Alabama the damage by flood along the Tombigbee and Black Warrior rivers was placed at \$1,500,000, and property to the estimated value of \$250,000 was saved by the Weather Bureau flood warnings sent from Mobile on the 17th. On the 18th Johnsonville, Tenn., was warned by the Weather Bureau office at Cairo, Ill., that the river would rise rapidly at that place to a stage approaching 26 feet within two or three days. Heavy rains were forecast for the 19th and 20th, and these rains caused a further rise at Johnsonville to a stage of 29 feet on the morning of the 23d. No special damage was caused.

The damaging frosts of the month were successfully forecast. In connection with the heavy frosts of the 1st in the interior of the middle and east Gulf and South Atlantic States timely warnings were widely distributed and were of